

Climate change poses a significant threat to cocoa farming, a vital sector for many economies and livelihoods in tropical regions. Rising temperatures, altered precipitation patterns, and increased frequency of extreme weather events are disrupting cocoa cultivation, which is highly sensitive to climatic conditions. These changes are leading to reduced yields, lower quality beans, and increased vulnerability to pests and diseases. As a result, cocoa farmers are facing diminished productivity and financial instability, impacting the broader supply chain and global chocolate industry. Addressing these challenges requires urgent adaptation strategies to ensure the sustainability of cocoa farming in the face of a changing climate.

Cocoa Production in Indonesia

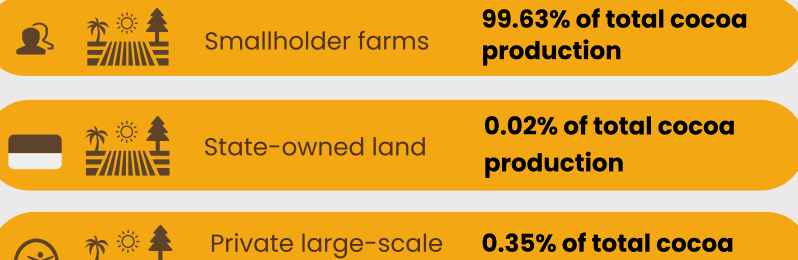
In 2022, Indonesia was the third-largest cocoa producer globally. However, compared to the top five producers, it has experienced the steepest decline in production over the past decade. Despite its substantial cocoa processing capacity, Indonesia relies on imports for 62% of its cocoa beans because domestic production does not meet the needs of its processing industry.

Cocoa Production in Indonesia by Plantations (2022)

In 2022, majority of cocoa produced in Indonesia was by small holder farms

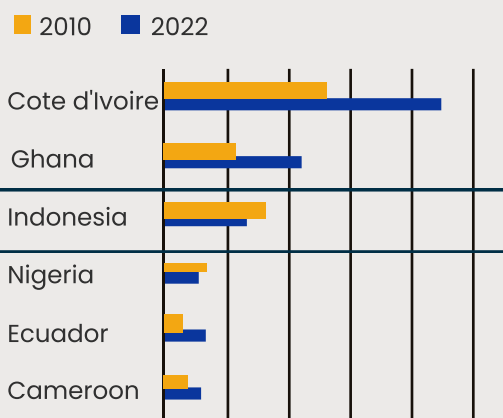
Number of smallholder farmers **1.7 Million**

Breakdown of total cocoa production

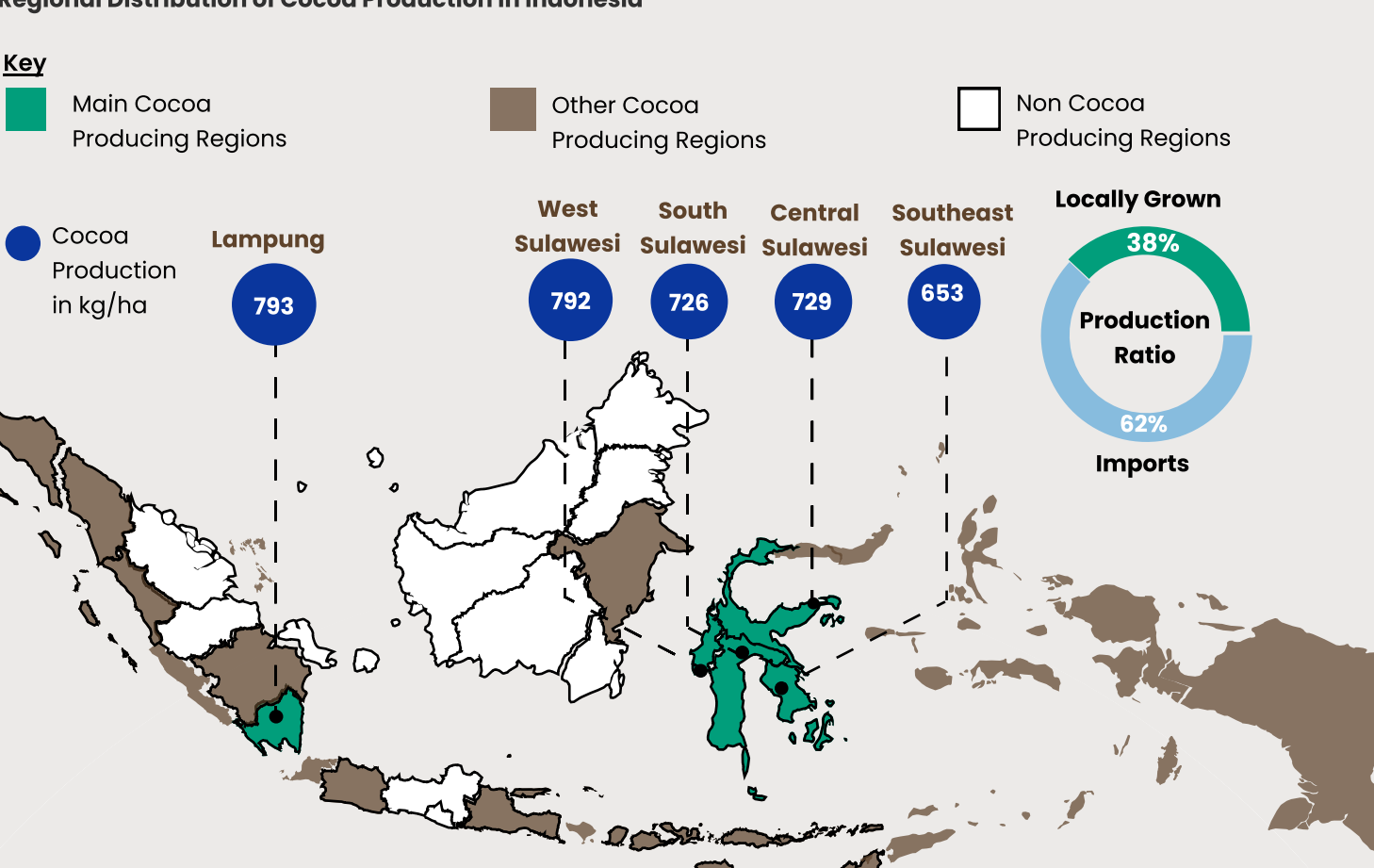


Top Cocoa Producers in 2022

Some top producing countries saw a decrease in cocoa production in 2022 compared to 2010 particularly Indonesia



Regional Distribution of Cocoa Production in Indonesia



Impact of Climate Events on Cocoa Production

Key

- Climate Events (Colorful Ring)
- Specific Effect of Climate Event on Cocoa Farming (Dotted Line)



Agroforestry

Agroforestry is a practice prevalent in tropical areas, involving mixing agricultural crops with trees in farming areas. Agroforestry enhances soil health, reduces erosion, and promotes water retention to boost agricultural production. But agroforestry plots do more than enhance crop productivity and quality—they protect biodiversity and can be used as a border buffer for protected forest zones.

Climate-smart Diversified Cocoa Agroforestry (DCA) combines cocoa with other crops to enhance sustainable landscapes by transitioning land from mono-cocoa to more biodiverse systems. DCA increases farmer income and food security by diversifying crops while simultaneously providing shade and other mid-level strata plants and crops that boost productivity and are better for the environment. DCA is also conducive to sloped forested areas that are less suitable for agricultural practices or, when used for agricultural purposes, can lead to climate-related vulnerabilities, such as landslides or soil erosion.

Agroforestry is a creative agricultural approach to reducing atmospheric carbon dioxide, one of the leading greenhouse gases effects.

Studies on cocoa production in South Sulawesi show the average carbon stock stored by cocoa to be :

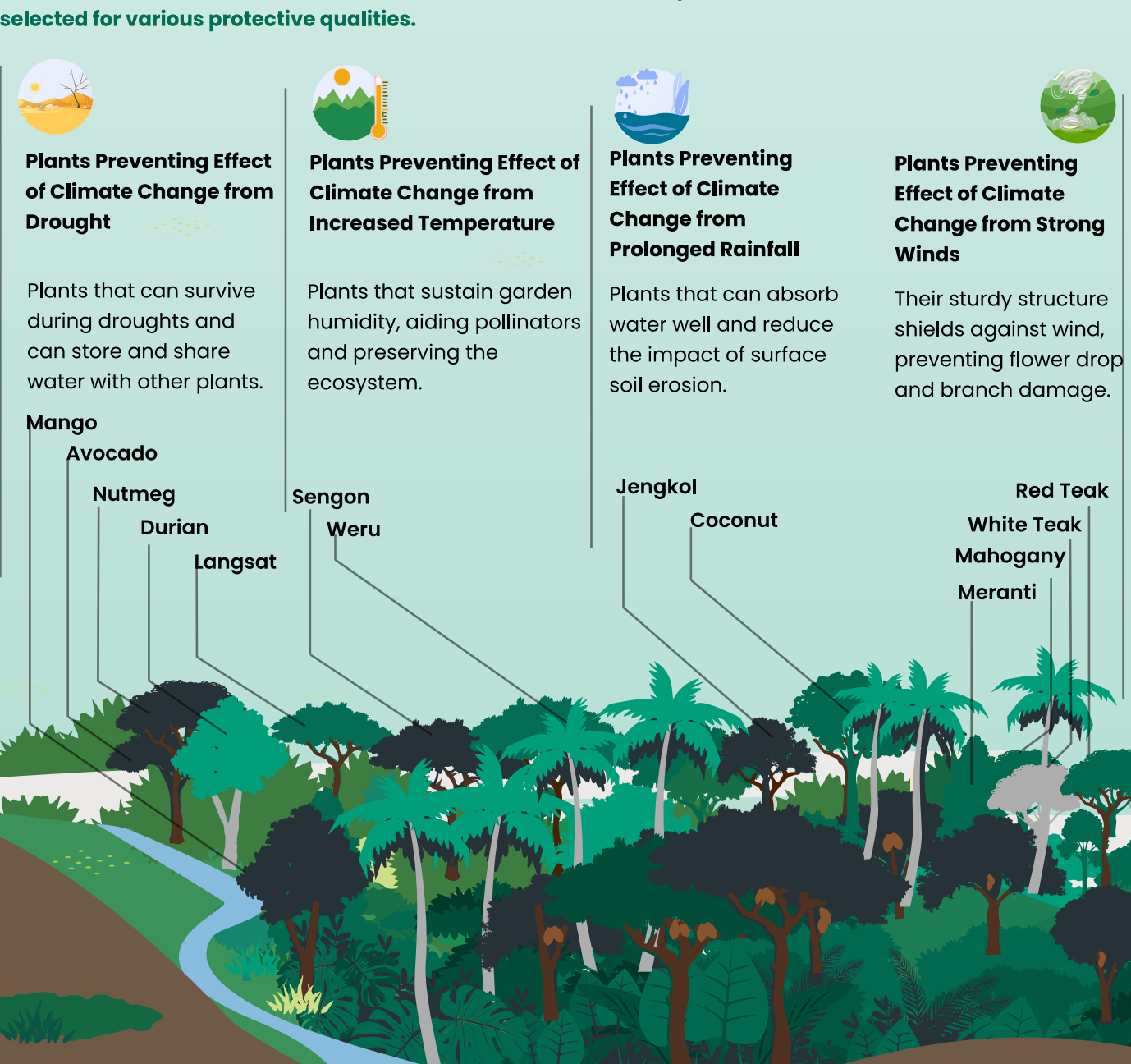
124.69 ton/ha using DCA practices

VS

91.7 ton/ha (i.e. only cocoa crops)

Complex agroforestry systems that incorporate many species of trees, shrubs and crops have an average potential carbon stock of **209 ton/ha**.

Illustration of a diversified cocoa farm, with trees, shrubs, and crops selected for various protective qualities.



About our work

Since 2015, I4DI has been advancing cocoa sustainability in Indonesia. By partnering with local communities and the private sector, we aim to build a resilient cocoa supply chain that balances environmental conservation with economic growth.

A key project in this effort is the Advancing Cocoa Agroforestry Toward Income, Value, and Environment (ACTIVE) initiative, a four-year partnership with USAID and Mars Inc. Focused on climate-smart agroforestry, ACTIVE helps 9,000 farmers, including 30% women, adapt to climate challenges. By increasing cocoa yields by 30%, boosting incomes by 15%, and reducing carbon emissions by 650,000 tons, ACTIVE highlights agroforestry's vital role in sustainable cocoa production.

Beyond environmental benefits, the project provides farmers with nurseries, seedling services, and market access for non-cocoa crops, ensuring long-term economic sustainability. This work aligns with I4DI's vision of embedding agroforestry into sustainable sourcing practices, offering a replicable model that enhances livelihoods while protecting ecosystems.

Learn more about ACTIVE and I4DI's work in Indonesia on [our Website](#)